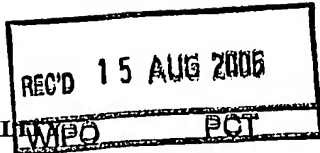


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference GRA26 028	FOR FURTHER ACTION	See Form PCT/IPEA/416																								
International application No. PCT/US05/16453	International filing date (day/month/year) 11 May 2005 (11.05.2005)	Priority date (day/month/year) 12 May 2004 (12.05.2004)																								
International Patent Classification (IPC) or national classification and IPC IPC: H04B 7/15 USPC: 455/11.1																										
Applicant ANDREW CORPORATION																										
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of ___ sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 20%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>			<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand 23 February 2006 (23.02.2006)	Date of completion of this report 28 July 2006 (28.07.2006)																									
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer Edan Orgad Telephone No. 571-272-7884 																									

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US05/16453

Box No. I Basis of the report

1. With regard to the language, this report is based on:

- ☐ the international application in the language in which it was filed.
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4(a))
- ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☒ the international application as originally filed/furnished
- ☒ the description:
pages 1-11 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____
- ☒ the claims:
pages 12-15 as originally filed/furnished
pages* NONE as amended (together with any statement) under Article 19
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____
- ☒ the drawings:
pages 1-5 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

** If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US05/16453**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims <u>1-34</u>	YES
	Claims <u>none</u>	NO
Inventive Step (IS)	Claims <u>1-34</u>	YES
	Claims <u>none</u>	NO
Industrial Applicability (IA)	Claims <u>1-34</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and Explanations (Rule 70.7)

Claims 1-13 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a communication system including a primary receiver, a primary transmitter, and a repeater that applies a known distortion to a primary signal passing there-through that identifies the repeater, where the primary receiver receives a first signal from the primary transmitter either directly or via the repeater, and where the first signal includes a primary signal and, if the first signal is received from the repeater, also includes a secondary signal that is a function of the primary signal and the known distortion applied by the repeater, the method of determining if a signal received by the primary receiver is received directly from the primary transmitter or indirectly through the repeater, comprising the steps of: receiving the first signal at the primary receiver; outputting the primary signal from the primary receiver; receiving the first signal at a secondary receiver and obtaining the primary signal from the primary receiver; applying an inverse function to the first signal and the primary signal to retrieve a distortion; and determining whether the first signal has been received from the repeater by comparison of the distortion and known distortions.

Claims 14-18 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest at the repeater receiving a primary signal and creating a secondary signal as a function of the primary signal and a known distortion, wherein the known distortion identifies the repeater transmitting the primary signal injected with the secondary as the first signal to the receiver.

Claims 19-34 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a wireless communication system having one or more repeaters, a first node and a second node, a method of determining if a signal received at the first node is received directly from the second node or via one of the one or more repeaters comprising; creating, at the one or more repeaters, a secondary signal $s'(t)$ that is a function $f(i, s(t))$ of a primary signal $s(t)$ received from the second node and a known distortion, i , applied by the one or more repeaters, where i is unique for each of the one or more repeaters; injecting the secondary signal $s'(t)$ into the primary signal $s(t)$ to form a first signal; transmitting the first signal $w(t)$ to the first node; detecting at the first node the primary signal $s(t)$; removing the primary signal $s(t)$ to recover the secondary signal $s'(t)$; determining a distortion from an inverse function $g(s'(t), s(t))$ of the secondary signal $s'(t)$ and the primary signal $s(t)$, where g is the inverse of f ; comparing the distortion i to the known distortions thereby determining if the signal is received via the one or more repeaters.